ABSTRACT OF THE DISCLOSURE

A power supply device for inverting power to be supplied to a motor and a method of controlling the power supply device. The power supply device includes an inrush protection (IP) circuit, a power factor correction (PFC) circuit and an overvoltage protection (OP) circuit. A controller and a pair of relays selectively connect predetermined components so that at least one component is selectively changed from operation in one of the IP, PFC and OP circuits to operation in another of the IP, PFC and OP circuits in response to a detected value of an inverter input voltage. The inrush protection circuit operates in a start up mode; the PFC circuit operates while normally driving the motor; and the overvoltage protection circuit operates where the inverter input voltage increases due to regeneration by the motor.